



**We**  
**Deliver Carbon**

**MATERIALS,  
BEYOND  
THE FUTURE**

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# We Deliver Carbon

As an integrated technology enterprise with over 20 years of expertise in carbon materials, we manage the entire production process—from raw materials to final products.

Our scientists and engineers continuously apply deep technical expertise and advanced manufacturing processes to deliver optimal material solutions to our customers.

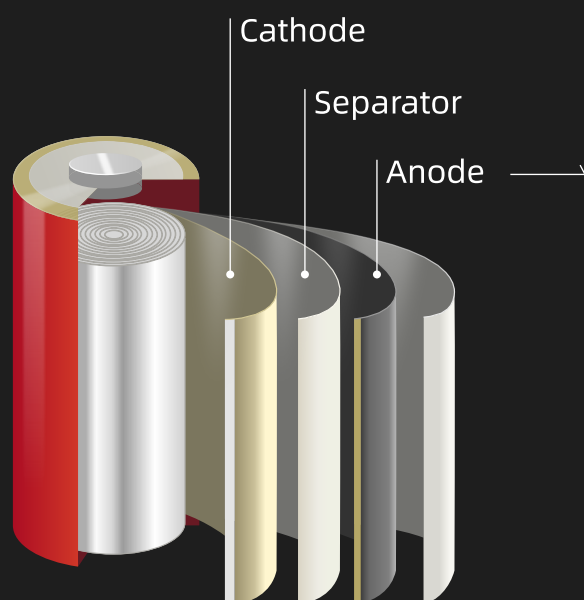


Headquarters, Liaoning, China

# Clean Energy



## Lithium Battery



### Pitch Coating

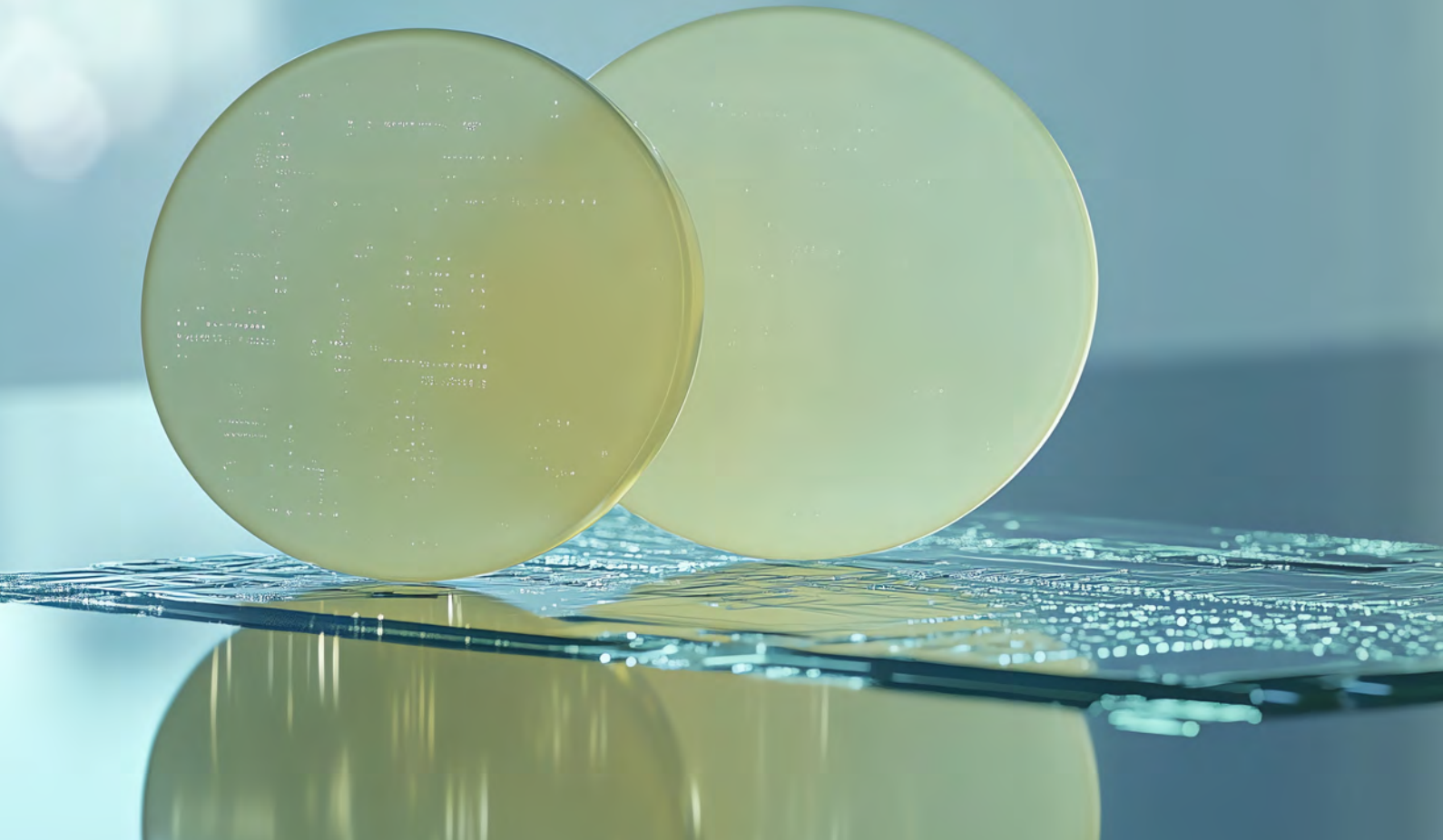
AYD's RefineU Series Petroleum Pitch enhances lithium-ion battery anodes by facilitating the formation of a thin, dense, and stable Solid Electrolyte Interface (SEI) membrane. This advancement delivers improved initial charging efficiency, superior cycle performance, and an enhancement of the battery's operational capability.

# Carbon Fiber

## Pitch Based Carbon Fiber

AYD is a pioneer in pitch-based carbon fiber. Based on carbon fiber, we have developed a complete, integrated carbon material supply chain. Our pitch-based carbon fibers are widely used in carbon fiber composites.





## Semiconductor

**PPM  $\leq$  20**

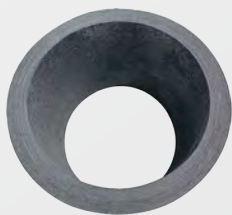
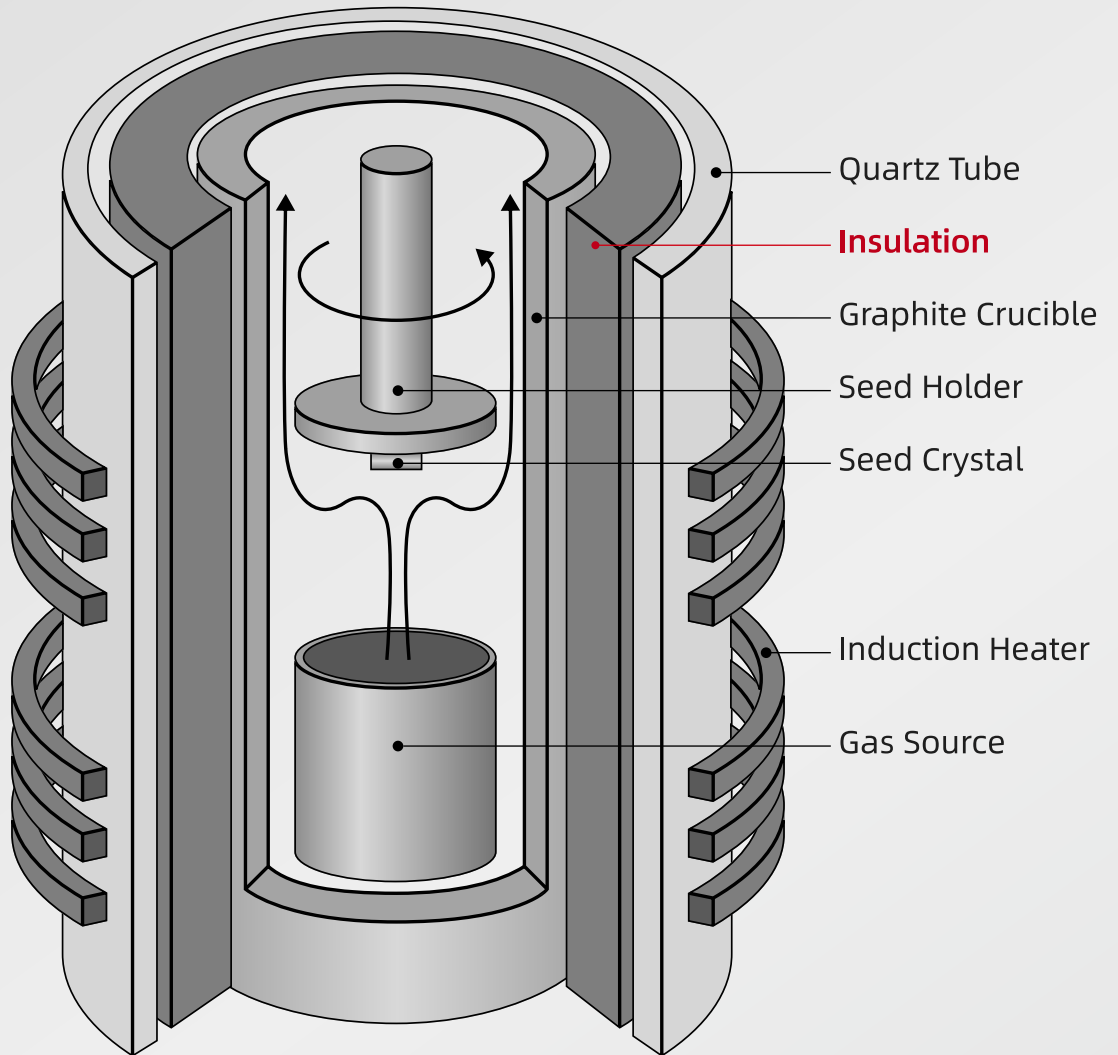
We have witnessed and contributed to the rapid development of the semiconductor industry.

Our semiconductor-grade thermal insulation is produced with the most advanced technique and strictest quality standards.



# Crystal Growth

We manufacture insulation materials for semiconductor-grade crystal growth furnaces using a unique fiber alignment technic.



# Epitaxy

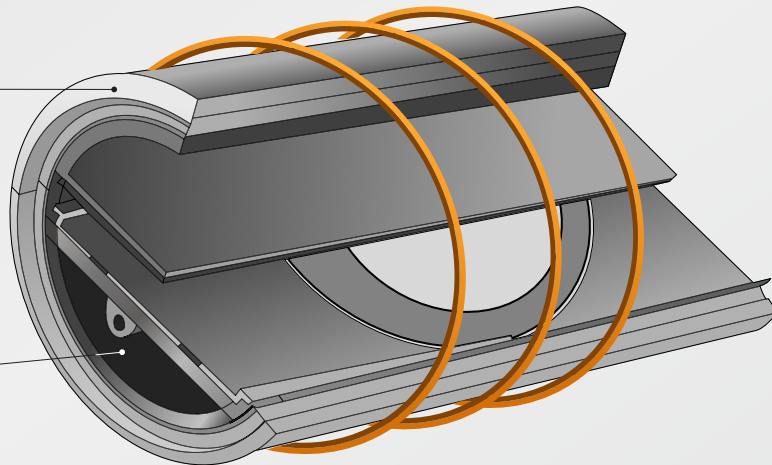
We offer comprehensive hot zone solutions for epitaxial equipment.

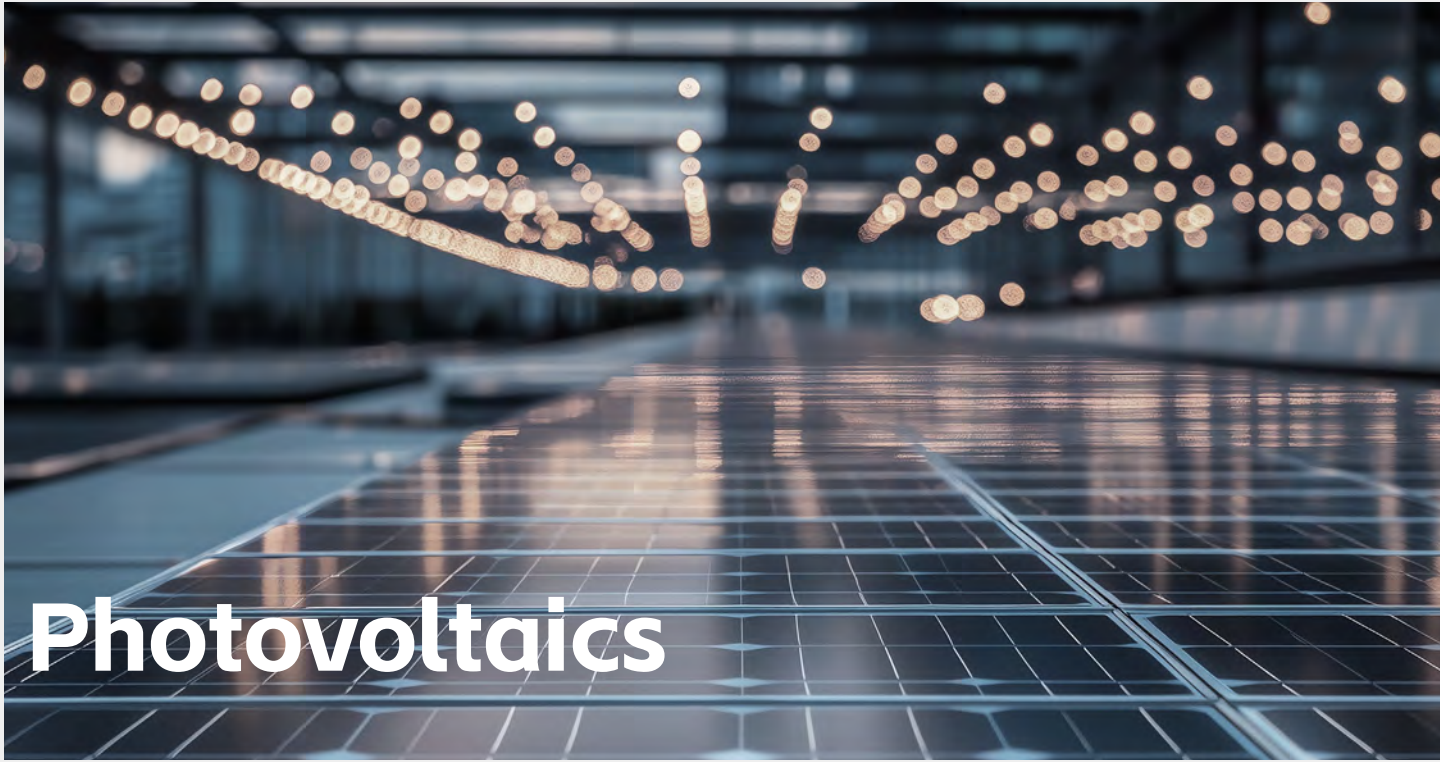


Shield Insulation



Cover Insulation

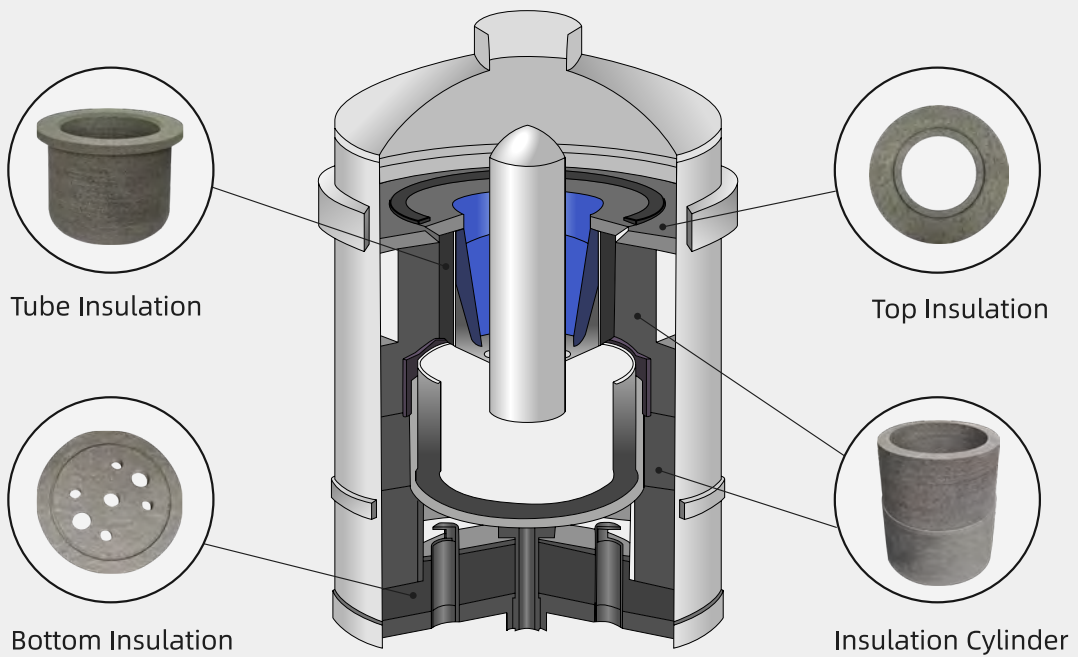




# Photovoltaics

## Thermal Insulations

Our customized photovoltaic thermal carbon fiber materials are characterized by their outstanding insulation performance and exceptional durability.



# Energy Storage



## Electrod Felt

AYD's Flow series electrode felt uses high-quality raw materials and our strict process control to provide stable performances for flow batteries.



## Optical Fiber

Our CarboniteX series thermal insulation is also widely used in crystal growth applications within the optical fiber industry.

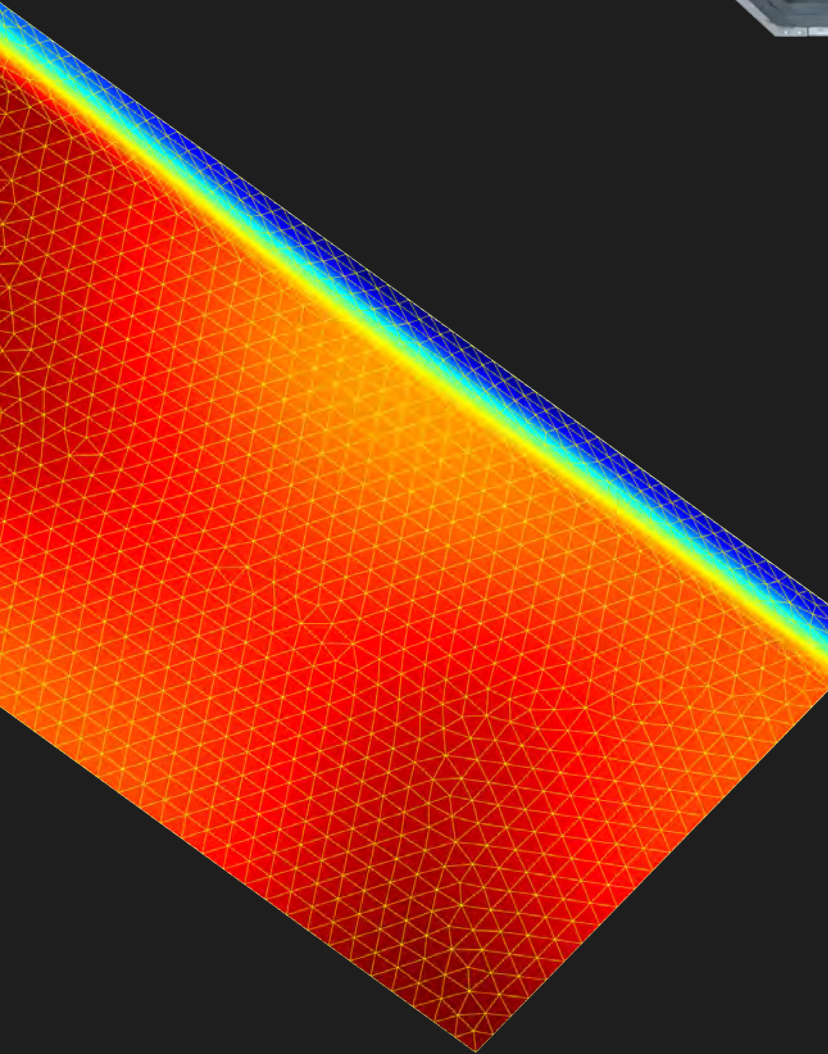


## Felt

AYD's rayon-based soft felt is manufactured with strict process control, making it suitable for high-temperature furnaces across various industries.

# High-Temperature Furnace & Services

AYD's products are widely used in custom applications within the high-temperature heat treatment industry. Leveraging our deep understanding of carbon materials, we provide customized hot zone designs and product applications for clients across various industries.



## Industries We Serve

- Powder Metallurgy Furnaces
- Sintering Furnaces
- Deposition Furnaces
- Diffusion Furnaces

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## Our Technical Services

- Structural Modification/Upgrades
- Hot-Zone Design

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## RefineU Series Petroleum Pitch

Product	Softing Point (°C) Mettler	Carbon Yield (wt%) GB/T268	Coking Yield (wt%) GB/T8727	QI (wt%) ASTM D2318	Ash (wt%) ASTM D2415
PE-150	145-155	≥47	≥50	≤0.5	≤0.1
PE-180	175-185	≥54	≥57	≤0.5	≤0.1
PE-200	195-205	≥58	≥60	≤0.5	≤0.1
PE-250	245-255	≥67	≥69	≤0.5	≤0.1
PE-280	275-285	≥73	≥75	≤0.5	≤0.1

## FiberElite Series Pitch-Based Carbon Fiber

Product	Item	Carbon Content wt%	UTS MPa	Young's Modulus GPa	Fiber Diameter μm	Resistivity mΩ·cm	Ash wt%	Fiber Length mm/μm
FiberElite Chopped	C-6							5-13
	C-12	≥95	≥345	≥27.6	10-15	4-8.5	≤0.05	8-20
	C-25							20-30
FiberElite Milled	P-100							80-150
	P-200							130-260
	P-400	≥95	≥345	≥27.6	10-15	4-8.5	≤0.05	280-500
	P-600							450-750
	P-800							700-950
	Customizable							Customizable

## Rigid Insulation

Feature	Unit	SolarShield	CarboniteX(Graphitized)	CarboniteX(Purified)
Carbon Content	wt%	≥99	>99.9	≥99.99
Ash	ppm	≤200	≤100	≤20
Bulk Density	g/cm <sup>3</sup>		0.13-0.18	
Thermal Conductivity(1000°C)	W/(m·K)		<0.3	
Size			Customizable	
CTE	0°C-1000°C		<3.5	
	0°C-2000°C	×10 <sup>-6</sup> /K	<6.0	
Compressive Strength	MPa		≥0.55	
Flexural Strength	MPa		≥0.69	

\* All strength tests are in the cross-sectional direction, and the bulk density can be customized

## Soft Felt

Feature	Unit	SolarShield	CarboniteX
Carbon Content	wt%	≥99	≥99.99
Ash	ppm	<500	≤20
Bulk Density	g/cm <sup>3</sup>		0.08-0.13
Thermal Conductivity	W/(m·K)		0.06-0.12
Length	m		≥6
Thickness	mm		10

## Flow Series Electrode Felt

Feature	Unit	Value
Bulk Density	g/cm <sup>3</sup>	0.08 ~ 0.11
Thickness	mm	2.5±7.5%; 4.5±7.5%
Ash	%	≤0.5
Porosity	%	> 90
Resistivity (0.1MPa)	mΩ·cm	< 300
Surface Resistivity (0.1MPa)	mΩ·cm <sup>2</sup>	< 200
Compressive Strength	MPa	≥0.12
Width	mm	> 1300 (Customizable)



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